ALSTOM

Air Preheater Company

Rate Sheet for Technical Services
Domestic Assignments

Rates:

1. Basic charge for an eight-hour day (work and/or travel) **$824.00**
2. Minimum daily charge is one (1) day, or eight (8) hours.
3. Overtime rates of one and one-half (1-1/2) times the basic charge will apply for all hours (work and/or travel) in excess of eight hours on Mondays through Fridays, and for all hours (work and/or travel) on Saturdays and Sundays.
4. Two (2) hour additional charge for split shift Technical Assistance.
5. Two (2) times the basic charge applies for all work and/or travels completed on Air Preheater holidays.
6. Travel expenses to and from the jobsite and local travel expenses incurred during the duration of the assignment are billed at actual cost. Company car rates are $.38 per mile.
7. Lodging, meals and related living expenses are billed at actual cost. Receipts for meals are not provided.
8. For non-working days in the vicinity of the jobsite and prior to the end of the assignment, local travel, lodging, meals and related living expenses are billed at cost.

Effective Dates:

1. The effective date is determined by the first day of work and/or travel for a specific assignment.
2. The above rates apply for effective dates beginning on April 1, 2002 through March 31, 2003.

Indemnity Provision:

The Seller agrees to indemnify and hold harmless the Purchaser and/or Owner, its officers and employees from and against any loss, costs, damages, expenses, claims or suits for bodily injuries, including death or property damage of third parties to the extent caused by the negligent acts or omissions of the Seller or its employees, which occur while at jobsite. In the event that a claim is presented to the Purchaser and/or Owner for which the Purchaser and/or Owner will seek indemnification under this paragraph, the Purchaser and/or Owner shall notify Seller, in writing, within ten (10) days of the receipt of such claim; failure to do so shall relieve the Seller of any and all liability under this paragraph.

Limitation of Liability

Seller's liability to Purchaser and Owner under the Purchase Order and Contract or any other cause of action relating to the subject matter of the Purchase Order or Contract, whether based on contract, warranty, tort (including negligence), strict liability, professional liability, indemnity or otherwise, will not exceed the greater of $100,000 or two (2) times the value of the Purchase Order or Contract, and in no event shall Seller be liable for loss of profits or revenue, costs of replacement power or capital, claims of Purchaser's or Owner's customers, or incidental or consequential damages of any nature.

These provisions for Indemnity and Limitation of Liability shall apply and prevail over any inconsistent provisions elsewhere in any Purchase Order or Contract for Services and we expressly reject any such conflicting provisions.

3020 Truax Road
P.O. Box 372
Wellsville, NY 14895

ALSTOM Power Inc.
Telephone: 585/593-2700
Fax: 585/596-2771

Lynndyl Unit #2
33.5VIT

Estimated Manhours for Air Preheater Clearfow™ Modifications (1 Air Heater)						
Step	Operation	Number of Shifts[1]		Men		Hours
		12	Hrs/Shift	Direct	Support	
1	Remove all hot and cold end baskets and hot and cold rotor seals	8		8	3	1,056
2	Remove cold end gratings	4		8	3	528
3	Mark and cut cold end stay plates	3		8	3	396
4	Clean up areas for rework	1		8	3	132
5	Layout for new cold end stay plate locations	2		8	3	264
6	Install new cold end stay plates with basket support bars	4		8	3	528
7	Re-install cold end rotor covers and sealweld in place	2		8	3	264
8	Install new cold end baskets	5		8	3	660
9	Install Basket Seals	2		8	3	264
10	Install new hot end baskets and tab as needed	3		8	3	396
11	Install hot and cold end rotor seals to spec	4		8	3	528
	Totals[1]	**38**		**11**		**5,016**

Note 1: Actual number of shifts could be lower with work overlap. Man-hours do not include mobilization, de-mobilization, material handling, supervision or local labor factors.

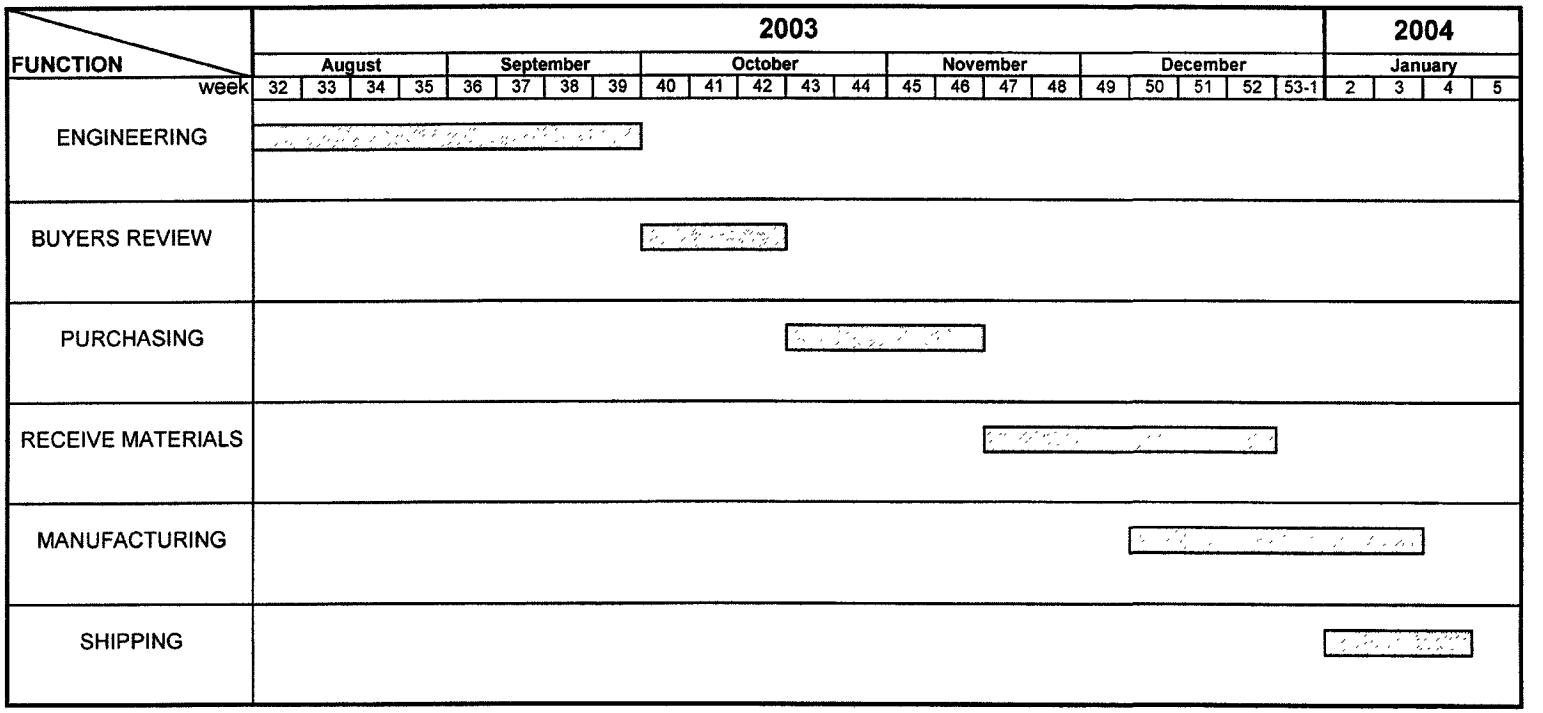
Note 2: Estimate excludes other work such as routine maintenance and other repairs.

Note 3: Manhours are for planning purposes only and are not intended to be used as actual contractor hours.

IP7_034063

PRELIMINARY PRODUCTION SCHEDULE

Customer: Intermountain Power Service Corp.
APC Proposal No: 3GS-1034
LAP- 4100



PLANNED

Milestone Dates:
Order receipt : 8/1/2003
Submit drawings: 9/26/2003
Final ship date: 1/23/2004

IP7_034064

PART D - DIVISION D2

DETAILED SPECIFICATIONS - TECHNICAL REQUIREMENTS

1. General: This specification provides technical information required for providing materials and technical services associated with modification of the Secondary Air Heaters on both Units 1 & 2. The Unit 2 Work is scheduled to begin February 28, 2004, and the Unit 1 Work is scheduled for March 5, 2005. Each outage is scheduled for the duration of 28 days

2. Unit Description: IPSC consists of two (2) sister units each operating two, 33-1/2-VI-64 parallel Lungstrom/CE Secondary Air Heaters and two, 24-1/2-VI-44 parallel Lungstrom/CE Primary Air Heaters. The two units have experienced several uprates from their original full load output of 840MWg. The current full load design rating of both units is 950MWg. Site elevation is 4700 feet above sea level.

   Only the Secondary Air Preheaters will be modified with these specifications.

   The existing secondary air heaters consist of a three layer design as follows:
   - Hot End Layer.....#22 Ga. 'DL' 36" depth low alloy/CR
   - Hot Intermediate Layer.....#22 Ga. 'DL' 16" depth low alloy/CR
   - Cold End Layer.....#18 Ga. NF-6 12" depth low alloy/CR

   The existing drive train consists of a General Electric, 75 H.P., Frame 365-T motor coupled to a Philadelphia Gear 10 AP - 132:1.1 speed reducer. The fluid coupling provided and installed as original equipment at the motor/speed reducer interface is no longer in service. The speed reducers have been retrofitted, since original installation, with pump driven, oil cooler assemblies. The motors are connected to the speed reducer with conventional, spider couplings.

   The support bearing consists of a Kingsbury, series 1450 thrust bearing and a SKF, #23244 CJ/C3/W33 radial bearing. The guide bearing consists of an SKF, #23192 radial bearing. The guide bearing lubrication circuits have also been modified for enhanced oil cooling.

3. Overall Schedule: The overall planned scope of work for modifications to the Secondary Air Heaters will begin on February, 28 2004 during the scheduled unit outage. The same work will be completed on the Unit 1 Secondary Air Heaters during the outage currently scheduled to begin March 5, 2005.

4. Contractor Scope of Work: This section defines the Work to be completed by the Contractor within these specifications. The scope shall include design, manufacture and delivery of new, high-efficiency, secondary air heater rotor hardware for ensuring optimal thermal and air/gas differential performance and reliability as follows:

a. Latest technology secondary air heater baskets and elements as required. (Four air heaters total)

b. Special tools required for maintenance or adjustment of the new rotor hardware.

c. Five complete sets of latest design air heater rotor seals. (Two per unit plus one spare set). Seal sets to include all seals required for complete rebuild of the air heater, including radial, circumferential and bypass seals.

d. Rotor seal clearance gauge assemblies sufficient for external indication of both the sector plate mid-span and outer tip on the hot end sector plates and the outer tip only on the cold end sector plates on all four secondary air heaters. (Total of 24 seal clearance gauge assemblies)

e. Technical direction services for ensuring accurate and efficient installation of the new air heater hardware. This includes technical support for the project engineer in providing direction to the selected installation contractor through all phases of the project scope.

f. Field engineering services for on-site direction during installation of the secondary air heater modifications as listed in Section 6. Field engineering services shall include technical direction to both IPSC and the installation contractor during mobilization/staging, installation, startup and testing of the air heaters in service.

g. On-site training for Operations/Maintenance/Engineering personnel regarding air heater performance parameters, recommended maintenance practices, and procedures and best operating practices for both the primary and secondary air heaters. Training agenda to be prepared based on three separate sessions of approximately three hours each over 2 to 3 days. Groups of up to approximately thirty (30) people will be invited to attend one of the three training sessions. The training classes will be taught by both the Field Engineer and the Alstom Project Design Engineer.

5. Design Conditions and Performance Criteria: The justification for this project rests on both performance and fan capacity recovery. Therefore, all possible effort shall be made to identify and incorporate the most current and proven performance related technologies.

a. Air heater elements shall be minimum 22 USS gage.

b. All air heater elements shall be reversible with no impact on air heater performance.

c. All element baskets shall be designed for side removal and access.

d. The bidder shall clearly identify all alloys used in the new rotor components provided.

e. The successful bidder shall provide procedures for ensuring that design dimensions, clearances and rotor alignment are maintained during installation.

The secondary air heater internals shall be designed to eliminate failure of any component due to erosion, oxidation/ corrosion and structural failure for a minimum period of 20 years when operated within the following conditions:

Ash (As shown in attached ash analysis See Appendix 2)

Maximum/Minimum/Design Gas Temperature _____/_____/_____°F

Maximum/Minimum/Design Air Temperature _____/_____/_____°F

Maximum Gas/Air Temperature Differential _____/_____°F

Design Gas/Air Temperature Differential _____/_____°F

Maximum/Design Gas Veclocity(if applicable) _____/_____lbs/hr

Maximum/Design Air Velocity (if applicable) _____/_____lbs/hr

Maximum Inlet/Outlet Pressure Differential _____/_____ in. w.g.

Design Inlet/Outlet Pressure Differential _____/_____ in. w.g.

Maximum/ Design Hot End Sootblowing Cycles at 150psi _____/_____cycles

Maximum/Design Cold End Sootblowing Cycles at 150psi _____/_____cycles

6. Field Service Engineering: Unless agreed to otherwise, in writing, by IPSC, Mr. Harlan Fennemore will serve as the Field Service Engineer/ OEM Technical Representative for the secondary air heater modifications. The Field Service Engineer shall arrive on site no later than one (1) week prior to the respective outage scheduled start dates. The Field Service Engineer shall be available in accordance with the planned outage shift schedule, from one (1) week prior to the outage scheduled start date, until at least one week following full load operation of the respective unit. Total duration of onsite stay will

be approximately 6 weeks The Field Service Engineer shall provide the following services:

a. Technical direction to IPSC for disassembly, cleaning, inspection, repair, part replacement, reassembly, sector plate assembly rotor alignment, balancing, etc., of the secondary air heater components.

b. Assist IPSC with overhaul planning, schedule preparation, and schedule updating both before and during the installation outage. Approximately 12 weeks prior to the outage, the Field Service Engineer shall travel to the site and participate in a finalization planning meeting for the installation outage.

c. Shall be onsite to receive and inspect all components as provided by the bidder to ensure no damage occurred during shipping and all required components are onsite.

d. FIRST outage only Conduct an on-site, off-line inspection of the Unit 2 Primary Air Heaters as early in the outage as possible without impacting the ongoing work on the Secondary Air Heaters. Also complete an on-line inspection of the Unit 1 Primary and Secondary Air Heaters at some time during the Unit 2 Outage.

e. Prepare and submit to IPSC a technical report which details the inspections, repairs, and future maintenance and operating recommendations related to the modifications completed and the status and condition of all air heaters inspected.

f. 1st outage only Prepare an agenda for an on-site air heater training class covering aspects of control, performance and maintenance on the secondary and primary air heaters. Submit agenda to the Contract Administrator. Field engineer will participate in three separate 3 hour training sessions held at the site.

g. Additional Support and Coordination as Required to Insure a Smooth Installation and Startup.

7. IPSC Provided Facilities: IPSC will provide the following services at the designated location for use within the Contractor's trailer:
- A single telephone line (Contractor shall arrange with phone company for service)
- A single fax line (Contractor shall arrange with phone company for service)
- 120vac power for trailer lighting/heating

8. Operating Experience: Intermountain Generating Station consistently operates with net capacity factors in excess of 90 percent, and net output in excess of 95 percent. With the current three layer design secondary air heaters, IPSC Operations has often felt it necessary to complete up to 4 blowing sequences every 24 hours. Normal air heater cleaning requirements have averaged approximately 2 blowing sequences every 24 hours.

9. Maintenance History and Provisions: Modifications to the secondary air heaters have been performed by IPSC personnel under the direction of an authorized Field Service Engineer. In addition to normal maintenance, the secondary air heaters have received the following modifications:
   - Tilting sector plate modifications
   - Guide bearing seal modifications
   - Auxiliary gear box oil cooling skid
   - Electric drive hydraulic coupling removal
   - Sector plate digital position control system upgrade

10. Manufacturing Schedule: Within four (4) weeks of Contract award, the Contractor shall submit a detailed schedule showing all facets of procurement, fabrication and delivery the secondary air heater upgrade and associated components. The schedule shall include:

    a. Order placement for material stock for each major component.

    b. Expected delivery to manufacturing facilities of stock for each major component.

    c. Verification of fabrication dimensions.

    c. Component fabrication.

    d. Component Assembly.

    e. Final assembly dimensional verification at manufacturing facility.

    f. Preparations for shipping.

    g. All Materials and components shipped from fabrication facility.

    h. All Materials and components delivered to site NO LATER THAN FEB 1

Written

Updated manufacturing progress reports shall be prepared and submitted to IPSC on a monthly basis starting the first month after Contract award and continuing up to the date of final inspection and shipment.

11. Air Heater Performance Testing: A secondary air heater performance verification test will be carried out for verification of bid design performance parameters as soon as practicable after the unit is on-line and stable. Air heater performance testing shall be based on the latest edition of the accepted standard for air heater performance testing ASME PTC-4.3.

12. Contract Document Submittals: During the course of fabrication and installation of the

secondary air heater modification hardware, the successful bidder shall submit at a minimum the following information in accordance with the monthly updated manufacturing schedules and reports outlined in Section 10 of this Division. As-built or updated drawing revisions shall be prepared and submitted following installation of each units respective secondary air heater modifications.

a. Assembly Drawings.

b. Modifications to any existing air heater components, including clearances.

c. Rotor Design Seal Clearance Drawings.

d. Rotor Alignment Drawings.

e. Component and assembly rigging plan including accurate weight of each lift.

f. Revised air heater differential and thermal performance curves including:
- Load vs. pressure drop curves
- Load vs. air outlet temperature curves.
- Load vs. gas outlet temperature curves
- Load vs. air heater leakage curves

g. Air heater material mill certificates.

h. Manufacturing progress reports as detailed above.

i. Bem include Material used/ Manufacturers

Where final revisions of the above documents are not readily reproducible by IPSC the successful bidder shall provide ten (10) copies upon request.

13. Shipping: All components and assemblies shall be packaged, coated, supported, and secured to prevent corrosion, damage, or deformation during shipping. Any damage sustained prior to delivery to the Intermountain Generating Station shall be judiciously corrected by and to the account of the successful bidder.

J. Appendix 1

K. Recommend Tolerances for testing. Measurement Errors
Calibration Errors
Results
Inlet Air Steady State

Liquidated Damages: The successful bidder shall be penalized for substandard execution of delivery and hardware performance, in accordance with the following provisions:

a If the successful bidder fails to meet the delivery schedule, as requested in Division D2 Section 10h, for each respective outage, the Contractor shall pay for all costs associated with mobilization and demobilization incurred by the installation contractor plus a boiler performance penalty of $50,000, representing a small fraction of the savings lost by the Owner.

b If the heat transfer surface is installed in accordance with the plans and specifications and under direct supervision of a Technical Services Representative provided by the bidder, then if the conditions (or a set of conditions adjusted and normalized for actual operating parameters) supplied by the bidder in Appendix A are not met, the successful bidders liability shall be limited to, at the bidders option, the necessary repairs, replacements or modifications to permit such performance, or in lieu thereof, may pay IPSC as liquidated damages in full satisfaction of the failure to meet this performance guarantee, an amount equal to the lessor of $5,000 per °F, above the guaranteed exit gas temperature, plus 1% of the purchase price of the heating elements for each full inch W G, that the air or gas side pressure drops are above the guarantee value, or 10% of the purchase price of the heating element, excluding freight

To establish non-compliance with this guarantee, IPSC shall at their expense, and using plant equipment, conduct testing procedures in compliance with the Air Heater Test Code, ASME PTC-4.3, within sixty (60) days after initial operation. The bidder shall supply, at the bidders cost, a representative to witness and validate the testing procedures and results. If a representative is not supplied, the bidder will be responsible for all cost associated with validating the results as provided by IPSC.

c If the heat transfer surface is installed in accordance with the plans and specifications and under direct supervision of a Technical Services Representative provided by the bidder, then the amp draw produced by the drive motors discussed in Division D2 Section 2 shall not increase upon the completion of the installation.

Provided the above conditions are satisfied, the successful bidders liability shall be limited to, at the bidders option, the necessary repairs, replacements or modifications to permit such performance, or in lieu thereof, may pay IPSC as liquidated damages in full satisfaction of the failure to meet this performance

guarantee, an amount equal to the lessor of cost of the increase in power consumption for 10 years (calculated at $0.025/KWH), or 10% of the purchase price of the heating element, excluding freight.

To establish non-compliance with this guarantee, IPSC shall at their expense measure amp draw on each drive motor at a recorded unit load, within thirty (30) days of the scheduled outage and again within sixty (60) days after initial operation. The amp draw readings shall be at unit loads greater than 800 MW. The bidder shall supply at the bidders cost, a representative to witness and validate the testing procedures and results. If a representative is not supplied, the bidder will be responsible for all cost associated with validating the results as provided by IPSC.

The provisions set forth in this section supercede any and all performance guarantees and statements of liquidated damages that shall be provided in the bidders proposal.

APPENDIX 1

Please provide the following information and return with bid documents. Base calculations on provided information and the ultimate analysis of fuel provided in Appendix 2

Operating Conditions (PER SAH)

Air Entering	5,496,660	lb/hr
Air Enter Temp	~~64~~ 59	°F
Gas Entering	6,285,500	lb/hr
Gas Enter Temp	~~736~~ 759	°F
Site Elevation	4700	Ft

APRIL

Guaranteed Performance

Air Side dP		Inches W.G.
Air Leaving Temp		°F
Gas Side dP		Inches W.G.
Gas Leaving Temp		°F

Assumptions (attach additional sheets as necessary)

Allowable Leakage		lb/hr

APPENDIX 2

Ultimate Fuel Analysis

Record Number: 870

Msds Date..... 06/01/98
Material Name.... IPP Fly Ash
Trade Name.....
Synonym.....
Mat Family.....
Cas#.....
Formula.....
Stock No.....
MFG Name..... Intermountain Power Service Corporation
MFG Address..... 850 W. Brush Wellman Road
MFG City..... Delta
MFG State..... UT
MFG Zip..... 84624
MFG Phone..... 435 864-4414
Emer Phone..... 435 864-4414
Hlth Cd.....
Fire Cd.....
Rctvy Cd.....
Specific Hzrd....
TLV.....
STEL.....
IDLH.....
Carcinogen..... N/A
D.O.T. Guide#....
Hazard Code.....
Regulatory Code..
RCRA Listing.....

ING name.....	ING Cas #...	ING %..	ING TLV...	ING PEL...
Fused Crystalline Silica	60676-86-0	45-70	0.1 mg/m3	0.1 mg/m3
Aluminum Oxide	1344-28-1	15-20	10 mg/m3	10 mg/m3
Calcium Oxide	1305-78-8	8-13	2 mg/m3	5 mg/m3
Iron Oxide	1309-37-1	4-7	5 mg/m3	10 mg/m3
Magnesium Oxide	1309-48-4	1-3	10 mg/m3	10 mg/m3
Sodium Oxide	12401-86-4	1-3	N/E	N/E
Potassium Oxide	12136-45-7	1-2	N/E	N/E
Sulfur Trioxide	7446-11-9	1-2	N/E	N/E

Appearance..... Light Tan to Gray Powder
Boiling Point(F).
Boil Point(C)....
Specific Gvty.... 2.2-2.5
Vapor Pressure...
Volatile.....
Vapor Density....
pH.....
Water Solubility. Slight
Evaporation Rate.

Melting Point.... >2000 F
Odor..... No Odor
Hazards..... Nonflammable & nonexplosive
Flash Point..... None
LEL..... N/A
UEL..... N/A
Auto Ignite..... N/A
Ext Media..... Use extinguishing media appropriate to the surrounding fire.
Procedures..... Fly ash may occasionally contain unburned combustibles such as coal. Fire or explosion may be possible if ash color is blackish.
Hlth Info..... Routes of Entry - Inhalation, eyes, skin.

Carcinogenicity - None known

Acute & Chronic Health Hazards

Inhalation - May cause irritation of the mucous membranes of the respiratory system and aggravation of respiratory disorders.

Eyes & Skin - May cause irritation to the eyes and to moist skin.

Ingestion - Small amounts are not likely to cause injury.

Chronic - Prolonged or frequent inhalation can lead to chronic lung disease (silicosis).

F.A.P: Inhalation - Remove to fresh air. If irritation persists or if respiratory problems develop, seek medical attention.

Note to Physicians - Inhalation of fly ash may aggravate pre-existing respiratory conditions.

F.A.P: Eyes - Immediately flush eyes with plenty of water. If irritation persists, seek medical attention.

F.A.P: Skin - Wash with mild soap and water. If irritation persists, seek medical attention.

F.A.P: Ingestion - Rinse mouth with clean water to clean out the fly ash and to prevent it from being drawn into the respiratory system. If problems develop, seek medical attention.

Protection..... Engineering Controls - Use exhaust ventilation to control dust emissions below the exposure guidelines. Maintain dust control equipment such as vent filters and dust collectors in good operating condition. Use floor sweep or light water mists to control dusts where necessary. Minimize time spent in areas susceptible to fly ash dusting to only that necessary to accomplish work. Minimize fly ash dusting by reporting and

repairing fly ash leaks immediately. Follow good housekeeping to prevent dust buildup.

Respirator Protection - Atmospheric levels of dust should be maintained below the exposure guidelines. When respiratory protection is required, use an approved air purifying respirator or self-contained breathing apparatus.

Eye Protection - When eye contact with this material is likely, wear goggles.

Skin Protection - Clean, body-covering clothing should be adequate for most contact. Use gloves when hands may be in contact with the ash. If prolonged exposure is expected, use protective clothing.

Reactivity..... Stable

No hazardous decomposition products or polymerization.

Incompatibility - Powdered magnesium, oxygen difluoride, and chlorine difluoride.

Precautions..... Handling - Avoid breathing dust. Avoid contact with eyes. Minimize dust generation and accumulation. Avoid prolonged contact with moist skin.

Storage - Store in sealed containers or those with dust control devices installed.

Spills..... Vacuum, sweep, or wash down with water. Avoid excessive dusting during cleanup.

Disposal..... Dispose of in accordance with federal, state, and local environmental regulation. Prefer disposal as an inert solid in approved landfills.

Misc Notes..... Solubility in Water - Slight, estimated 0.5%

Average Particle Size - 8 microns

Combustibles - <1.0%

Emergency Overview

Fly ash is a light tan to gray powder with no odor. It may cause irritation when inhaled or when in contact with eyes or moist skin. Those with existing respiratory problems may experience severe irritation when fly ash is inhaled.

Chronic exposure to high levels of fly ash dust may cause chronic lung disease (silicosis).

Chronic/Carcinogenicity - silicosis has been found to develop in workers after prolonged and extensive exposure. Tumors developed on mice from inhalation at doses of 5 mg/m3.

Mutagenicity - Caused mutations in microorganisms at doses of 535 mg/l.

Reproduction - Caused developmental abnormalities in fetal rats when pregnant mother was dosed at 600 mg/kg intratracheal.

Subchronic - Caused changes in blood count and liver weight in rats from inhalation at doses of 270 mg/m3.

Hazards

Fused Crystalline Silica - TSCA inventory, OSHA air contaminant]

Aluminum Oxide - TSCA inventory, OSHA air contaminant, EPCRA TRI

Calcium Oxide - TSCA inventory, OSHA air contaminant

Iron Oxide - TSCA inventory, Osha AIR CONTAMINANT

Magnesium Oxide - TSCA inventory, OSHA air contaminant

Sodium Oxide - Not established

Potassium Oxide - TSCA inventory

Sulfur Trioxide - TSCA inventory, OSHA highly hazardous chemical, EPCRA EHS & TRI

Transport..... Not regulated as a hazardous material under USDOT standards.
DOT HAZARDS.....

1 records listed.